



PATENT COOPERATION TREATY

PCT
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 INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03SGL0129WOP	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP2003/003881	International filing date (day/month/year) 15 April 2003 (15.04.2003)	Priority date (day/month/year) 15 April 2002 (15.04.2002)
International Patent Classification (IPC) or national classification and IPC H01L 23/58		
Applicant SCHOTT AG		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 9 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 9 sheets.

3. This report contains indications relating to the following items:

- I Basis of the report
- II Priority
- III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV Lack of unity of invention
- V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI Certain documents cited
- VII Certain defects in the international application
- VIII Certain observations on the international application

Date of submission of the demand 06 September 2003 (06.09.2003)	Date of completion of this report 26 August 2004 (26.08.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/003881

I. Basis of the report

1. With regard to the elements of the international application:*

the international application as originally filed

the description:

pages _____ 1-22 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

the claims:

pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____ 16 June 2004 (16.06.2004)

the drawings:

pages _____ 1/9-9/9 _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

the sequence listing part of the description:

pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
 the language of publication of the international application (under Rule 48.3(b)).
 the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

contained in the international application in written form.
 filed together with the international application in computer readable form.
 furnished subsequently to this Authority in written form.
 furnished subsequently to this Authority in computer readable form.
 The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, Nos. _____
 the drawings, sheets/fig _____

5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

the entire international application.

claims Nos. _____

because:

the said international application, or the said claims Nos. _____ relate to the following subject matter which does not require an international preliminary examination (*specify*):

the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____ are so unclear that no meaningful opinion could be formed (*specify*):

the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

no international search report has been established for said claims Nos. _____ 15-25,35-39

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

the written form has not been furnished or does not comply with the standard.

the computer readable form has not been furnished or does not comply with the standard.

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- restricted the claims.
- paid additional fees.
- paid additional fees under protest.
- neither restricted nor paid additional fees.

2. This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- complied with.
- not complied with for the following reasons:

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- all parts.
- the parts relating to claims Nos. 1-14, 22-34, 40-44

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/03881

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	YES
	Claims	1-5, 7-11, 22-28, 30-34, 40-41, 43- 44 NO
Inventive step (IS)	Claims	YES
	Claims	6, 12-14, 29, 42 NO
Industrial applicability (IA)	Claims	1-14, 22-34, 40-44 YES
	Claims	NO

2. Citations and explanations

1. This report makes reference to the following documents:

D1: EP-A-1 178 529 (SHARP KK) 6 February 2002
(2002-02-06)

D2: US-A-4 374 391 (CAMLIBEL IRFAN ET AL) 15 February 1983 (1983-02-15)

D3: CH 387 175 A (WESTERN ELECTRIC CO) 31 January 1965 (1965-01-31)

D4: US-B1-6 268 058 (TAHON JEAN-PIERRE ET AL) 31 July 2001 (2001-07-31)

D5: US-A-5 436 084 (HALUSKA LEREN A ET AL) 25 July 1995 (1995-07-25)

D6: EP-A-1 139 424 (SHARP KK; NIPPON TELEGRAPH & TELEPHONE (JP)) 4 October 2001 (2001-10-04)

2. The subject matter of claims 1-5, 7-11, 22-28, 30-34, 40-41 and 43-44 is not novel (PCT Article 33(2)).

2.1 Claims 1, 23 and 24: D1 (see column 7, line 50 - column 9, line 38; figure 3) discloses a process in which a substrate (1) provided on one side with a semiconductor element (1a) is coated with a vapour-

deposited protection layer (4a). For the sake of completeness, it is pointed out that D2 (see column 3, line 31 - column 6, line 63; figure 3), D3 (see page 1, lines 1-55; page 5, line 103 - page 6, line 23) and D4 (see the abstract; column 3, lines 46-60; column 4, lines 17-18; column 8, lines 24-49) also disclose or suggest the subject matter of claims 1, 23 and 24. It is pointed out that D5 (see column 1, line 46 - column 5, line 38) discloses that a boron silicate layer can be used as a copy-protection layer, and therefore this technical feature implicitly also applies to the boron silicate layers in documents D2-D4.

2.2 D1 also discloses the additional features of the following claims:

claims 2-3 and 25-26: silicon substrate (paragraph [0023]) and protection layer (4a) made of silicon oxide;

claims 4 and 27: protection layer 4, figure 1;

claim 30: plasma CVD, column 8, line 3;

claims 8 and 32: layers 5 and 7, figures 1 and 3;

claim 41: figure 1;

claim 44: column 7, line 50 - column 9, line 38.

2.3 D2 also discloses the additional features of the following claims:

claims 7 and 31: column 2, lines 35-36;

claims 9 and 33 (electron-beam vaporisation): column 4, lines 46-48.

2.4 D3 also discloses the additional features of the following claims:

claims 5 and 28: boron silicate with aluminium oxide and alkali oxide, page 11, line 111 - page 12, line

9;

claims 9 and 33 (thermal vaporisation): claim 11; claim 11: the application of layers to cold and heated circuit elements, that is at temperatures below 300°C, page 1, lines 26-35.

2.5 Claims 10 and 34: D1 (see column 7, line 50 - column 9, line 38; figure 3) discloses that the copy-protection layer has a thickness of several hundred micrometers. D3 (see page 1, lines 26-35) discloses a layer thickness of 25 micrometers. D2 (see column 6, line 63) discloses a layer thickness of 0.25 micrometer. D4 (see column 2, lines 55-57) discloses a layer thickness of up to 350 micrometers.

2.6 Claims 22 and 40: D4 (see the abstract; column 3, lines 46-60; column 4, lines 17-18; column 8, lines 24-49) discloses a process in which a boron silicate layer is used as a protection layer for a security card. It is implicit to a person skilled in the art that this type of card includes electronic decryption means.

2.7 Claim 43: device in figure 8 of D4.

3. The subject matter of claims 6, 12-14, 29 and 42 is not inventive (PCT Article 33(3)).

3.1 Claims 6 and 29: D1 (see column 7, line 50 - column 9, line 38; figure 3) discloses a process and a component from which the subject matter of claims 6 and 29 differs in that the copy-protection layer is not made of boron silicate glass with a proportion of aluminium oxide and alkali oxide. D5 (see column 1, line 46 - column 5, line 38) discloses a process

for producing a copy-protection layer made of boron silicate glass. It is known from D3 (see page 12, lines 7-9) that this type of glass contains a certain proportion of aluminium oxide and alkali oxide. The subject matter of claims 6 and 29 therefore involves only a simple choice of a known material which a person skilled in the art would make without being inventive.

3.2 Claim 12: D2 (see column 4, lines 59-60) discloses that the substrate is coated under a typical pressure of 0.001 mbar. However, the vaporisation of layers onto a substrate is a routine procedure for a person skilled in the art who knows that even lower pressures advantageously affect the quality of the vaporised layer. Moreover, pressures of up to 10^{-7} mbar are conventionally applied in vaporisation installations. The subject matter of claim 12 is therefore not inventive.

3.3 Claims 13-14: D6 (see paragraphs [0054]-[0056] and [0063]-[0066]; figure (1a)) discloses a substrate (2) provided with semiconductor elements and a protection layer (8) and applied to a layer (3) of glass and plastics. It is obvious to a person skilled in the art that the choice of protection layer and the application of the substrate to the layer (3) constitute different, mutually independent technical problems. Consequently, a person skilled in the art could easily design said protection layer (8) as a copy-protection layer by following the indications of document D1, without being inventive, and thus produce a component according to the process as per claims 13 and 14. Claims 13 and 14 are therefore not inventive.

3.4 Claim 42: it is obvious to a person skilled in the art that all types of electronic components, in particular those used in decryption devices, must be protected from foreign scrutiny. Documents D1-D4 provide the information required for that purpose. The subject matter of claim 42 is therefore not inventive.

4. The subject matter of claims 1, 13, 14, 22, 23, 24, 40 and 42-44 is unclear (PCT Article 6).

4.1 Claims 1 and 44 are drafted as independent process claims and claims 23, 24 and 43 are drafted as independent product claims. The claims are therefore not concise. Moreover, the claims display an overall lack of clarity because the number of independent claims makes it difficult, if not impossible, to identify the subject matter for which protection is sought, and it is therefore unreasonably difficult for third parties to determine the scope of protection.

4.2 It should be expressly stated in claim 1 that the copy-protection layer (4) is applied to the first side (1a) of the substrate (1). It is not clear from the present version of claims 1, 13 and 14 whether the glass layer (14) or the plastic layer (5) as per claims 13 and 14 is additionally applied, besides the copy-protection layer (4) as per claim 1, or is identical to the latter, since the copy-protection layer (4) could also be applied to the second side (1b) of the substrate (1).

4.3 Claims 22 and 40: it is not clear what technical

features constitute the "decryption means" as per claims 22 and 40.

- 4.4 Claims 23 and 44: these claims attempt to define an object in terms of its production process. However, they do not clearly specify what are the technical features of the object. Moreover, it is impossible for a person skilled in the art to determine from a finished object whether the object was produced by the process described or by another process known from the prior art.
- 4.5 Claim 42: it is not clear what are the technical features of the decryption device as per claim 42.
- 4.6 Claim 43: it is not clear what are the technical features of the claimed device because the claimed subject matter was defined only in terms of functional indications.
5. Contrary to PCT Rule 5.1(a)(ii), the description does not cite documents D1-D6 or indicate the relevant prior art disclosed therein.
6. Independent claims 1, 23, 24, 43 and 44 have not been drafted in the two-part form defined by PCT Rule 6.3(b). However, in the present case the two-part form would appear to be appropriate. Accordingly, the features known in combination from the prior art (document D1) should have been placed in the preamble (PCT Rule 6.3(b)(i)) and the remaining features specified in the characterising part (PCT Rule 6.3(b)(ii)).
7. The application does not comply with PCT Rule 6.4(a)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP 03/03881

because multiple dependent claims must not serve as a basis for any other multiple dependent claims.

7. An explanation should be given for the acronym "TOF-SIMS" used in line 29, page 12, and in line 34, page 20, of the description.

9. The vague indication of the "spirit of the invention" in line 12, page 22, of the description, gives the impression that the subject matter for which protection is sought does not correspond to the subject matter defined in the claims and therefore leads to a lack of clarity (PCT Article 6) when the description is used to interpret the claims (cf. PCT Guidelines, III-4.3a).